etching said semiconductor film into a semiconductor layer after said leveling step.

36. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating in a reducing atmosphere after removing said oxide film; and

etching said semiconductor film into a semiconductor layer after said leveling step.

37. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating in an inert gas after removing said oxide film; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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38. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating in an atmosphere after removing said oxide film, wherein a concentration of oxygen or an oxygen compound contained in said atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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39. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating in a reducing atmosphere after removing said oxide film, wherein a concentration of oxygen or an oxygen compound contained in said reducing atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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40. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

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forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating in an inert gas after removing said oxide film, wherein a concentration of oxygen or an oxygen compound contained in said inert gas is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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41. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

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forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid; and

etching said semiconductor film into a semiconductor layer after said leveling step.

8

42. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

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irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in a reducing atmosphere; and

etching said semiconductor film into a semiconductor layer after said leveling step.

9

~~43~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in an inert gas; and

etching said semiconductor film into a semiconductor layer after said leveling step.

10

~~44~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in an atmosphere, wherein a concentration of oxygen or an oxygen compound contained in said atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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~~45~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

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treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in a reducing atmosphere, wherein a concentration of oxygen or an oxygen compound contained in said reducing atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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~~46~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

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leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in an inert gas, wherein a concentration of oxygen or an oxygen compound contained in said inert gas is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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~~47~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in an atmosphere containing oxygen for crystallizing said semiconductor film after providing said catalytic element;

removing an oxide film from a surface of said semiconductor film by etching after said irradiation of said laser light; and

leveling said surface of said semiconductor film by heating in an atmosphere after removing said oxide film, wherein a concentration of oxygen or an oxygen compound contained in said atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

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~~48~~. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in an atmosphere containing oxygen for crystallizing said semiconductor film after providing said catalytic element;

treating a surface of said semiconductor film with a hydrofluoric acid after said irradiation of said laser light;

leveling said surface of said semiconductor film by heating after said treatment with said hydrofluoric acid in an atmosphere, wherein a concentration of oxygen or an oxygen compound contained in said atmosphere is 10 ppm or less; and

etching said semiconductor film into a semiconductor layer after said leveling step.

56. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a catalytic element for facilitating a crystallization of said semiconductor film;

irradiating said semiconductor film with laser light in air for crystallizing said semiconductor film after providing said catalytic element;

removing a natural oxidation film from a surface of said semiconductor film by etching; and

leveling said surface of said semiconductor film by heating in an atmosphere after removing said natural oxidation film, wherein a concentration of oxygen or an oxygen compound contained in said atmosphere is 10 ppm or less.